

Application No: 10/707, 112
Docket No.11761-US-PA
Customer No. 31561

Claim Amendment

Please amend the claims according to the following listing of claims and substitute it for all prior versions and listings of claims in the application.

1. (previously presented) A method of fabricating a passivation layer, comprising the steps of:

providing a substrate having a plurality of device structures and at least an interconnect thereon;

forming a patterned metallic layer over the interconnect;

performing a plasma-enhanced chemical vapor deposition process to form a first passivation layer directly on ~~over~~ the metallic layer, wherein the plasma-enhanced chemical vapor deposition process is carried out at a processing pressure between about 21 to 25 Torr and with a processing power between about 1 to ~~45~~ 600 Watts; and

forming a moisture impermeable second passivation layer over the first passivation layer.

Claim 2 (cancelled)

3. (original) The method of claim 1, wherein the first passivation layer comprises a silicon oxide layer.

4. (original) The method of claim 1, wherein the second passivation layer comprises a silicon nitride layer.

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5. (currently amended) A method of fabricating a passivation layer, comprising the steps of:

providing a substrate having a plurality of device structures and at least an interconnect thereon;

forming a patterned metallic layer over the interconnect;

performing a semi-atmospheric chemical vapor deposition process with liquid tetra-ethyl-ortho-silicate (TEOS) and ozone inside a reaction chamber to form a first passivation layer over directly on the metallic layer, wherein the liquid tetra-ethyl-ortho-silicate flowing into the reaction chamber has a flow rate between 500 sccm to 3000 sccm and the ozone flowing into the reaction chamber has a flow rate between 5000 sccm to 15000 sccm; and

forming a moisture impermeable second passivation layer over the first passivation layer.

Claims 6-7 (cancelled)

8. (original) The method of claim 5, wherein the pressure inside the reaction chamber during the semi-atmospheric chemical vapor deposition process is between about 20 to 750 Torr.

9. (original) The method of claim 5, wherein the semi-atmospheric chemical vapor deposition process is carried out at a temperature between about 200°C to 600°C.

10. (original) The method of claim 5, wherein the first passivation layer comprises a silicon oxide layer.

11. (original) The method of claim 5, wherein the second passivation layer comprises a silicon nitride layer.